



**IP(19)14rev**

***NASCO Implementation Plan for the period 2019-2024***

***EU – Spain (Navarra)  
(Revised version received 26 October 2020)***



## IP(19)14rev

### *NASCO Implementation Plan for the period 2019 – 2024*

***The main purpose of this Implementation Plan is to demonstrate what actions are being taken by the Parties / jurisdictions to implement NASCO’s Resolutions, Agreements and Guidelines.***

*In completing this Implementation Plan please refer to the **Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress**, CNL(18)49.*

*Questions in the Implementation Plan are drawn from the following documents:*

- NASCO Guidelines for Management of Salmon Fisheries, CNL(09)43 (referred to as the ‘Fisheries Guidelines’);*
- Report of the Working Group on Stock Classification, CNL(16)11;*
- Minimum Standard for Catch Statistics, CNL(93)51 (referred to as the ‘Minimum Standard’);*
- Revised matrix for the application of the six tenets for effective management of an Atlantic salmon fishery, WGCST(16)16<sup>1</sup>;*
- NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat, CNL(01)51;*
- NASCO Guidelines for Protection, Restoration and Enhancement of Atlantic Salmon Habitat, CNL(10)51 (referred to as the ‘Habitat Guidelines’);*
- Williamsburg Resolution, CNL(06)48;*
- Guidance on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks (SLG(09)5) (referred to as the ‘BMP Guidance’);*
- Guidelines for Incorporating Social and Economic Factors in Decisions under the Precautionary Approach (CNL(04)57); and*
- Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced’, NEA(18)08.*

<b>Party:</b>	<b>European Union</b>
<b>Jurisdiction / Region:</b>	<b>Spain (Navarra)</b>

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<sup>1</sup> This document can be obtained from the NASCO Secretariat; email [hq@nasco.int](mailto:hq@nasco.int)

# 1. Introduction

## 1.1 What are the objectives for the management of wild salmon? (Max 200 words)

The main objective for the management of wild salmon stock in the Bidasoa River (Navarra) is to improve its conservation status through:

- (1) The restoration of a self-sustaining wild population of salmon, where the abundance and population structure will ensure the genetic diversity and natural reproduction.
- (2) The control of the recreational fisheries in order to ensure that the first objective is achieved.

## 1.2 What reference points (e.g. conservation limits, management targets or other measures of abundance) are used to assess the status of stocks? (Max 200 words) (Reference: Sections 2.4 and 2.5 of the Fisheries Guidelines)

Yearly monitoring of ascending spawners and parr densities at spawning and nursery grounds has been ongoing since 1990, in addition to yearly estimates of river catches. The monitoring data have been used to set the conservation limits, according to the following nine Indicators:

- (1) Salmon run size.
- (2) Age structure.
- (3) Sex-ratio.
- (4) Escapement reproductive potential.
- (5) Smolt escapement.
- (6) Spawner run velocity (seasonality or run-timing).
- (7) Effective length of river habitat.
- (8) Genetic diversity.
- (9) Sanitary status.

For every indicator, Conservation Limits have been established for the three Conservation Statuses (Favourable, Unfavourable, and Critical). For example, for the Indicator #1 'Salmon run size' conservation limits have been tentatively established as follows: Favourable status >700 salmon < Unfavourable status <150 salmon > Critical status.

Details can be obtained from the "Atlantic Salmon Management Plan in Navarra (2019-2024)", a more extensive version of this NASCO Implementation Plan for the period 2019-2024, elaborated and legally adopted by the Government of Navarra.

The established Conservation Limits are tentative and were established following NASCO's Precautionary Approach, but need to be ratified or updated according to scientific criteria. Therefore, in March 2020, professor Carlos García de Leániz (University of Swansea, Wales), was hired to carry out the work "Defining conservation limits for Bidasoa River Salmon". The work is expected to be completed before the end of 2020 and will contain the definition of the final conservation limits for all the indicators mentioned above, based on a scientific approach.

## 1.3 What is the current status of stocks under the new classification system outlined in CNL(16)11?

Stock Classification Score	Salmon Classification Category	No. rivers
0	Not at Risk	
1	Low Risk	

2	Moderate Risk	
3	High Risk	1
N/A	Artificially Sustained	
N/A	Lost	
N/A	Unknown	

**Additional comments:**

The size of the salmon run in 2017 (302 salmon) in Bidasoa River is 43% of the tentative Conservation Limit (700), therefore the Conservation Limit Attainment Score is 3 (High Risk). The Impact Assessment Score is considered 2 (Moderately impacted). As a result, the stock is considered to be in High Risk. A new assessment is carried out on a yearly basis and published in the “Annual Monitoring of Atlantic Salmon in the Bidasoa River” report, available for free downloading at [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Pesca/Especies+pescables.htm](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Pesca/Especies+pescables.htm). The 2019 report is currently being prepared.

**1.4 How is stock diversity (e.g. genetics, age composition, run-timing, etc.) taken into account in the management of salmon stocks? (Max 200 words)**

Population selections that may introduce genetic biases are avoided in the breeding and repopulation activities. Genetic characterization of the Bidasoa Salmon (between 1992 and 2006) suggested that is a homogeneous and stable population over time, with the highest mitochondrial DNA variability in the Iberian Peninsula, which indicates a random reproduction and low inbreeding rates among individuals. In order to update this information, in February 2020 Paloma Morán, professor of genetics at the University of Vigo, was hired to carry out the work "Characterization and genetic variability of Bidasoa River Salmon", which will assess the incidence that the management of the species may be having in the conservation of the genetic integrity of the population, proposing new measures if needed. It is expected to be completed before the end of 2020.

Age and size composition are monitored through the biometric data (sex, length, weight, scales and adipose tissue sample) gathered from every salmon caught during the angling season and every salmon that reaches the salmon trap in the Salmonid Migration Monitoring Station. Run-timing, water flow and temperature are also recorded. All this information is analysed for population trends and the conclusions are used to establish every year the angling calendar and the Total Allowed Catch.

**1.5 To provide a baseline for future comparison, what is the current and potential quantity of salmon habitat? (Max 200 words)  
(Reference: Section 3.1 of the Habitat Guidelines)**

The Bidasoa basin has a total length of 552.5 km of river channels, of which 75.4 km belong to the main Bidasoa River channel and 477.2 km to the tributaries. Part of the basin is not accessible to salmon due to the natural characteristics of the channels: strong slopes, scarce entity of the streams due to its size and/or flow or presence of natural obstacles, which prevent salmon from migrating upstream. Therefore, the potentially accessible length of river for salmon in the Bidasoa basin is **68.2** km in the main channel and **255.9** km in the tributary streams.

However, nowadays accessibility for salmon in the Bidasoa basin is restricted, due to the presence of obstacles of artificial origin that reduce the actual accessible length of the basin to **58.3** km in the main channel (85% of the potential length) and to **176.0** km in the tributaries (69% of the potential).

### **1.6 What is the current extent of freshwater and marine salmonid aquaculture?**

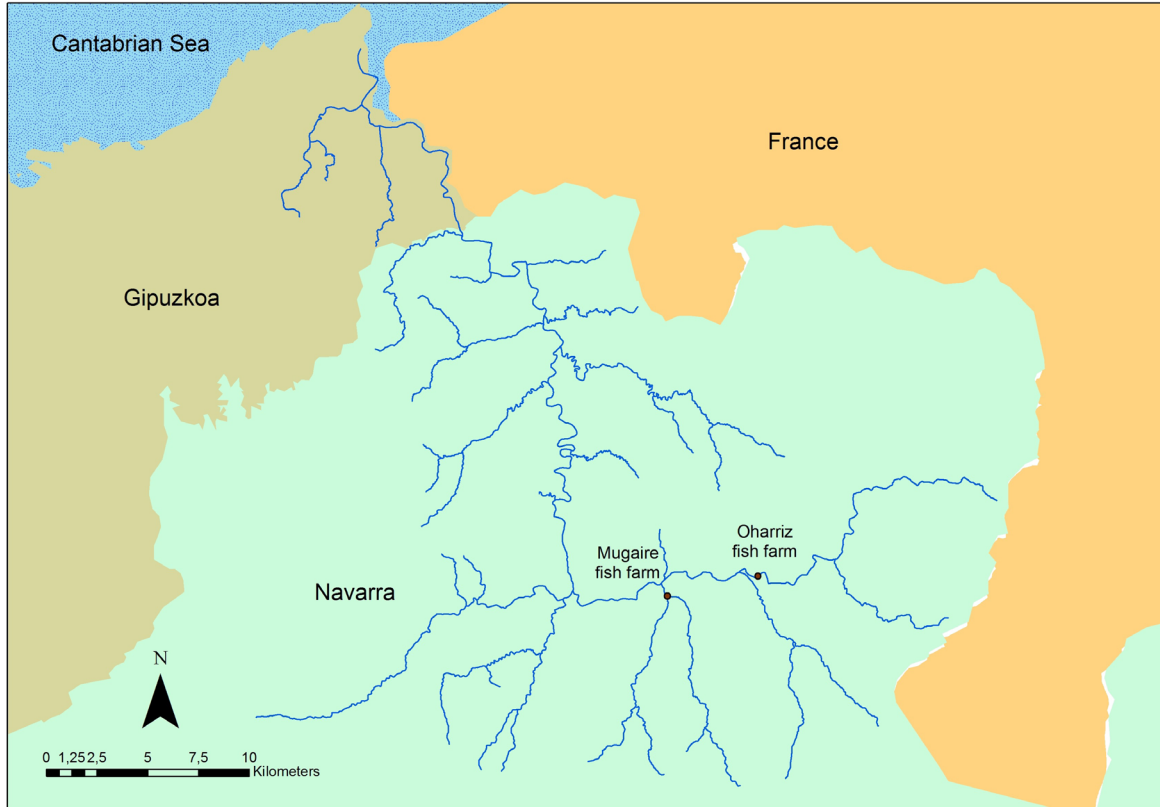
Number of marine farms	None
Marine production (tonnes)	-
Number of freshwater facilities	In the Bidasoa River basin there is a hatchery owned by the Regional Government (Mugaire fish farm) and used exclusively for salmon and trout stocking purposes, and a small trout commercial hatchery (Oharriz fish farm).
Freshwater production (tonnes)	The production of salmon in Mugaire fish farm is around 90,000 yearlings/year for supplemental stocking (around 0.7 tonnes/year), although production varies among years. Brown trout are grown only in this fish farm as juveniles before being stocked as adults in the rivers of Navarra. Annual production is around 70,000 trout/year (around 11.5 tonnes/year). The production of the Oharriz commercial fish farm is around 130 tonnes/year of trout.

Append one or more maps showing the location of aquaculture facilities and aquaculture free zones in rivers and the sea.

Mugaire fish farm (owned by the Regional Government) is located at UTM X: 613.060 and UTM Y: 4.776.733 (Datum: ETRS89).

Oharriz fish farm (commercial) is located at UTM X: 617.397 and UTM Y: 4.777.379 (Datum: ETRS89).

Both are showed in the following map:



**1.7 Please describe the process used to consult NGOs and other stakeholders and industries in the development of this Implementation Plan. (Max 200 words)**

The Government of Navarra has elaborated the “Atlantic Salmon Management Plan in Navarra (2019-2024)”, which will be legally adopted. This Management Plan is a more complete version of the NASCO Implementation Plan for the period 2019-2024, as it extensively explains and justifies the problems that the species faces in the Bidasoa River and the solutions that will be adopted during the implementation period, while there is no difference in the threats and actions that are included in this Implementation Plan.

The Atlantic Salmon Management Plan (in Spanish) has gone during December 2018 through a complete consultation process that includes the presentation to the “Fishing Advisory Commission of Navarra” (where angling associations, NGOs and Universities gathered with the Regional Government of Navarra), to the “Council of the Environment of Navarra” (where research community, NGOs and organizations linked to sport and nature activities gathered with the Regional Government of Navarra) and it was made available in the “Transparency Portal of the Government of Navarra” webpage, where every citizen could access to the contents of the plan and provide feedback. All the questions received during this process were answered and the suggestions and comments discussed before the approval of the final version of the document.

## 2. Management of Salmon Fisheries:

*In this section please review the management approach to each of the fisheries in your jurisdiction (i.e. commercial, recreational and other fisheries) in line with the relevant NASCO Resolutions, Agreements and Guidelines. For Parties / jurisdictions that prosecute mixed-stock fisheries, there should at least one action related to their management.*

### 2.1 What are the objectives for the management of the fisheries for wild salmon? (Max. 200 words)

To maintain the recreational fisheries (rod and line) of wild salmon providing that it does not threaten the conservation status of the species.

### 2.2 What is the decision-making process for the management of salmon fisheries, including predetermined decisions taken under different stock conditions (e.g. the stock levels at which regulations are triggered)? (Max. 200 words)

*(This can be answered by providing a flow diagram if this is available.)  
(Reference: Sections 2.1 and 2.7 of the Fisheries Guidelines)*

The recreational fisheries will always be governed by the conservation status of the wild salmon stock. The conservation status will be evaluated yearly and the predetermined decisions to be taken under the three different stock conservation statuses are:

- If the conservation status is Favourable, the recreational fishery will be open the next season, regulated under a Total Allowable Catch (TAC) and a fishing season calendar.
- If the conservation status is Unfavourable, the recreational fishery could be opened the next season under a TAC and a fishing season calendar, but additional management actions (supplemental stocking, habitat protection and restoration) are necessary to improve the conservation status.
- If the conservation status is Critical, the recreational fishery will be closed until the management actions (supplemental stocking, habitat protection and restoration) taken improve the conservation status.

### 2.3 (a) Are any fisheries permitted to operate on salmon stocks that are below their reference point (e.g. Conservation Limits)? If so, (b) how many such fisheries are there and (c) what approach is taken to managing them that still promotes stock rebuilding? (Max 200 words) (Reference: Section 2.7 of the Fisheries Guidelines)

(a) Yes but with restrictions. Recreational fishery in Bidasoa River is allowed under a Total Allowable Catch (TAC), a fishing season calendar and with a spatial limitation when the population is below the Favourable Conservation Limit (tentatively established at the moment at 700 salmon), but only as long as the population is above the Critical Conservation Limit (tentatively established at the moment at 150 salmon).

(b) There is only one recreational fishery in Bidasoa River. It is restricted to the first 22 Km of the main river from the sea (32% of the potentially accessible length or 37% of the current accessible length of the main Bidasoa River, being fishing prohibited in the tributaries). The first 10 Km are cross border between France and Spain and few (or none) anglers fish there, so most of the angling activity is concentrated in 12 Km.



<p>(c) This recreational fishery could be permitted in Unfavourable Conservation Status because it operates under a Total Allowable Catch (TAC) and additional management actions are taken to improve the conservation status: the fishing season encompasses the spring run and is restricted to a maximum of 79 days; the maximum total authorized catch (TAC) for the season is set as 15% of the average salmon run in the last five years; there is also a multi-sea-winter (MSW) protection measure, which closes the season for a week when 80% of the average MSW salmon in the last five years are caught; a catch and release promotion programme is being implemented. Catch and release are not practiced by anglers in the Bidasoa River. To promote this practice, the Government of Navarra started in 2019 a Sponsorship Program, through which anglers could donate on a voluntary basis the salmon caught alive to the fish farm of the Government of Navarra, where it would be used in the captivity breeding programme. The first year of implementation has been very successful as five MSW salmon were donated in spring and produced 30,000 eggs in December. The impact of the programme on the media and criticism of the population and anglers was very favourable, which suggests that in the following years the number of volunteers could increase and begin to raise awareness among anglers about the possibility of fishing in the catch and release modality.</p>
<p><b>2.4 (a) Are there any mixed-stock salmon fisheries? If so (b) how are these defined, (c) what was the mean catch in these fisheries in the last five years and (d) how are they managed to ensure that all the contributing stocks are meeting their conservation objectives? (Max. 300 words in total)</b> <i>(Reference: Section 2.8 of the Fisheries Guidelines)</i></p>
<p>(a) No. Recreational fishery only exploits the Bidasoa River stock.</p>
<p>(b) Not applicable</p>
<p>(c) Not applicable</p>
<p>(d) Not applicable</p>
<p><b>2.5 How are socio-economic factors taken into account in making decisions on management of salmon fisheries? (Max. 200 words)</b> <i>(Reference: Section 2.9 of the Fisheries Guidelines)</i></p>
<p>Fishery management decisions are annually consulted to the ‘Fishing Advisory Commission’ where all involved stakeholders are represented.</p>
<p><b>2.6 What is the current level of unreported catch and what measures are being taken to reduce this? (Max. 200 words)</b> <i>(Reference: Section 2.2 of the Fisheries Guidelines and the Minimum Standard)</i></p>

Unknown, but it is believed to be negligible or non-existent. Three surveillance forces (Environmental Rangers, Ecological Foral Police and SEPRONA Civil Guards) look out for poaching, but in the last 20 years there has been no indication of such activity. If any of the three security forces detected this illegal activity, the Environment Department would be immediately notified. According to the legislation, anglers have the obligation to report all catches and therefore catch statistics regarding numbers and weight of salmon landed is good and reliable.

**2.7 Has an assessment under the Six Tenets for Effective Management of an Atlantic Salmon Fishery been conducted? If so, (a) has the assessment been made available to the Secretariat and (b) what actions are planned to improve the monitoring and control of the fishery? (c) If the six tenets have not been applied, what is the timescale for doing so? (Max. 200 words)**  
*(Reference: Six Tenets for Effective Management of an Atlantic Salmon Fishery, WGCST(16)16)*

(a) Yes. An assessment was conducted in 2016-17 by the Government of Navarra and sent to the Spanish Ministry of Environment

(b) Since spring 2018, a new control system has been set up. The system is based in the maximum number of fishing permits allowed per day and allows controlling the fishing pressure on the stock. At the moment this maximum number is set up at 100 permits/day, but will be revised yearly to be adjusted as needed. Other actions, as the Total Allowable Catch or the multi-sea-winter (MSW) protection measures were implemented in 2010 and are revised on a yearly basis.

(c) They have been applied

**2.8 Identify the threats to wild salmon and challenges for management associated with their exploitation in fisheries, including bycatch of salmon in fisheries targeting other species.**

Threat / challenge F1	Establishment of the necessary reference limits
Threat / challenge F2	Annual monitoring of the species
Threat / challenge F3	Control of recreational fisheries
Threat / challenge F4	Increase the knowledge about the angling activity

*Copy and paste lines to add further challenges which should be labelled F5, F6, etc.*

<b>2.9 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 2.8 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the management of salmon fisheries?</b>		
<b>Action F1:</b>	Description of action:	Data analysis for the establishment of the necessary reference limits.
	Planned timescale (include milestones where appropriate):	2020
	Expected outcome:	Reference limits for every indicator of conservation status.
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: science based reference limits are established. Monitored by: the corresponding report that will be published in the webpage of the Department of Environment of the Government of Navarra
	Funding secured for both action and monitoring programme?	Yes
<b>Action F2:</b>	Description of action:	Annual monitoring of the species, based on: (1) Collection of biometric and biological data of every salmon captured on recreational fishing. (2) Collection of biometric and biological data of every spawner salmon passing the salmon trap. (3) Electrofishing surveys on juvenile production areas. (4) Monitoring of redds and spawners. (5) Collection of biometric and biological data of every salmon passing the salmon trap. (6) Setup of a smolts control system. (7) To collect biometric and biological data of smolts captured. (8) Annual estimation of the conservation status of the salmon stock. (9) Monitoring of the sanitary status. (10) Preparation of protocols for the above actions.
	Planned timescale (include milestones where appropriate):	Annually.
	Expected outcome:	Data for stock trend analysis and evaluation.
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: all data (biometric, electrofishing, redds, smolts, conservation status, sanitary status and protocols) have been gathered. Monitored by: the corresponding reports that will published each year in the webpage of the Department of Environment of the Government of Navarra

	Funding secured for both action and monitoring programme?	Yes
<b>Action F3:</b>	Description of action:	Establishment of the annual total authorized catch (TAC) and the multi-sea-winter protection measures.
	Planned timescale (include milestones where appropriate):	Annually.
	Expected outcome:	Annual estimate of the total authorized catch.
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: every year, the annual total authorized catch (TAC) and the multi-sea-winter protection measures are implemented in the angling regulation. Monitored by: the yearly published angling regulations.
	Funding secured for both action and monitoring programme?	Yes
<b>Action F4:</b>	Description of action:	Socio-economic study of the angling activity in Bidasoa River
	Planned timescale (include milestones where appropriate):	2023
	Expected outcome:	An study dedicated to the socio-economic drivers behind the angling activity in Bidasoa River
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: the socio-economic drivers of the salmon angling activity in Bidasoa River are known. Monitored by: the corresponding report that will be published in the webpage of the Department of Environment of the Government of Navarra.
	Funding secured for both action and monitoring programme?	Yes

*Copy and paste lines to add further actions which should be labelled F5, F6, etc.*

### **3. Protection and Restoration of Salmon Habitat:**

*In this section please review the management approach to the protection and restoration of habitat in your jurisdiction in line with the relevant NASCO Resolutions, Agreements and Guidelines.*

- 3.1 How are risks to productive capacity identified and options for restoring degraded or lost salmon habitat prioritised, taking into account the principle of ‘no net loss’ and the need for inventories to provide baseline data?** *(Max. 200 words)*  
*(Reference: Section 3 of the Habitat Guidelines)*

Productive capacity is linked with salmon population status, which in turn depends on the available habitat area and quality. Therefore, risks to productive capacity of salmon are identified by habitat loss or deterioration. In fact, this is also true for all other fish species present in the Bidasoa River, some of which are also migratory (e.g. eel, sea lamprey or Allis shad). Therefore, salmon habitat is important for overall biodiversity and river health, as well as for several ecosystem services. Bidasoa River is included in Natura 2000 as an SCI (ES2200014) due to the presence of species (salmon is among them) and habitats of community importance and as a result, salmon habitat conservation and restoration is included as one of the objectives in the Management Plan of this SCI. The inclusion of the Bidasoa River in Natura 2000 and the Management Plan of the SCI adopted by the Government of Navarra legally secures no further deterioration of the salmon habitat in this river.

Therefore, habitat restoration is prioritized in water management in Bidasoa River basin. This restoration prioritisation is made in upriver direction in order to gain access to the reproductive areas. 15 years ago, an accessibility map was drawn and since then, habitat area is continuously monitored. Actions to improve upriver longitudinal connectivity are carried out almost every year, mainly construction of fishways or barrier demolitions. Annually, the accessibility map is redrawn in order to estimate the progress in river connectivity and identify forthcoming actions to be taken. This map is crossed with the population data obtained from the electrofishing surveys, redds counting and spawners' monitorisation.

- 3.2 How are socio-economic factors taken into account in making decisions on salmon habitat management?** *(Max. 200 words)*  
*(Reference: Section 3.9 of the Habitat Guidelines)*

Every action for salmon habitat restoration and protection is consulted with the corresponding local stakeholders and their opinion evaluated for the analysis of alternatives. Socioeconomic factors are considered in the management by considering the opinions and management suggestions made by relevant stakeholders, as well as considering official national and NASCO socio-economic guidelines and policies, when making decisions on habitat management. As stated in section 1.7, consultation processes are common in Navarra and every year the Government meets with the “Fishing Advisory Commission of Navarra” (where angling associations, NGOs and Universities gathered with the Regional Government of Navarra) and since the Bidasoa River is included in Natura 2000, also the “Council of the Environment of Navarra” (where research community, NGOs and organizations linked to sport and nature activities gathered with the Regional Government of Navarra) is also included in the decision process. In addition, as the Bidasoa river is included in Natura 2000, a Steering Committee was legally created in 2014, as an advisory and participation body in the management of the conservation of the SCI, made up of actors from the basin and representatives of the Government of Navarra. Among other tasks, this Steering Committee ensures that the measures envisaged in the SCI Management Plan are executed, seeking their adaptation to the planned schedule and promoting cooperation and coordination among the different stakeholders in the territory, periodically evaluating their degree of compliance, etc.

**3.3 What management measures are planned to protect wild Atlantic salmon and its habitats from (a) climate change and (b) invasive aquatic species?**  
*(Max. 200 words each)*  
*(Reference: Section 3.2 of the Habitat Guidelines)*

(a) The fact that salmon is in its Southern distribution limit in Spain makes climate change an important issue for the population’s future. At the moment, some options as implementation of better water regulation from hydropower production are being studied, but nothing has been yet concluded due to the important economic repercussion that these measures could have. The Spanish Strategy for Climate Change and the Navarra Climate Change Roadmap, are general management tools that need to be adapted at the local scale.

(b) The only invasive species identified in Bidasoa River that could threaten salmon at the moment is the American mink (*Neovison vison*). Although the impact of this species on salmon populations is believed to be negligible, the Government of Navarra set up in 2015 a programme to eradicate the species from the Bidasoa basin, which is still ongoing. In the last few years, presence of *Cyprinus carpio* and *Oncorhynchus mykiss* has been detected in the lower reaches of the Bidasoa River. Although only a few specimens have been detected and in a very specific area, the Government of Navarra has authorized their eradication and each year culling of specimens of both species is carried out.

**3.4 Identify the main threats to wild salmon and challenges for management in relation to estuarine and freshwater habitat.**

Threat / challenge H1	Protection of summer holding pools, spawning grounds, and juvenile rearing areas from civil works or other aggressions of human origin.
Threat / challenge H2	Connectivity and habitat restoration.
Threat / challenge H3	Smolt mortality due to hydropower turbines

Copy and paste lines to add further threats/challenges which should be labelled H5, H6, etc.

<p><b>3.5 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 3.4 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the Protection, Restoration and Enhancement of Atlantic Salmon Habitat?</b></p>		
<b>Action H1:</b>	Description of action:	Update of the salmonid mesohabitat maps.
	Planned timescale (include milestones where appropriate):	2021
	Expected outcome:	An updated GIS database and maps. This information will be used to report the impact assessment of any construction that could affect the important salmonid mesohabitats identified
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: the corresponding report and GIS database. Monitored by: the corresponding report that will be published in the webpage of the Department of Environment of the Government of Navarra
	Funding secured for both action and monitoring programme?	Expected
<b>Action H2:</b>	Description of action:	(1) Evaluation of the permeability of 7 obstacles or fish-ways carried out. (2) Preparation and implementation of 12 new projects to improve longitudinal connectivity.
	Planned timescale (include milestones where appropriate):	2019-2024.
	Expected outcome:	Significant improvement of the river habitat accessible for salmon.
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: 7 studies of fishway permeability and 12 projects of longitudinal connectivity written up. Monitored by: the corresponding reports that will be published in the webpage of the Department of Environment of the Government of Navarra
	Funding secured for both action and monitoring programme?	Expected
<b>Action H3:</b>	Description of action:	Study about the smolt mortality during the migration to the sea in the hydropower turbines of the Bidasoa River basin
	Planned timescale (include milestones where appropriate):	2022

	where appropriate):	
	Expected outcome:	Study that would provide data about the smolt mortality in hydropower turbines during the migration to the sea
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: the corresponding report on smolt mortality. Monitored by: the corresponding report that will be published in the webpage of the Department of Environment of the Government of Navarra
	Funding secured for both action and monitoring programme?	Expected
<b>Action H4:</b>	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

Copy and paste lines to add further actions which should be labelled H5, H6, etc

**4. Management of Aquaculture, Introductions and Transfers, and Transgenics:**

*Council has requested that for Parties / jurisdictions with salmon farms, there should be a greater focus on actions to minimise impacts of salmon farming on wild salmonid stocks. Each Party / jurisdiction with salmon farming should therefore include at least one action relating to sea lice management and at least one action relating to containment, providing quantitative data in Annual Progress Reports to demonstrate progress towards the international goals agreed by NASCO and the International Salmon Farmers Association (ISFA):*

- 100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms;*
- 100% farmed fish to be retained in all production facilities.*

*In this section please provide information on all types of aquaculture, introductions and transfers, and transgenics (including freshwater hatcheries, smolt-rearing etc.*



<p><b>4.1</b></p>	<p><b>(a) Is the current policy concerning the protection of wild salmonids consistent with the international goals on sea lice and containment agreed by NASCO and ISFA? (b) If the current policy is not consistent with these international goals, when will current policy be adapted to ensure consistency with the international goals and what management measures are planned to ensure achievement of these goals and in what timescale?</b>  <i>(Max. 200 words for each)</i>  <i>(Reference: BMP Guidance)</i></p>
	<p>(a) Not applicable as Navarra has no rearing of salmon in net pens in the sea.</p>
	<p>(b) Not applicable</p>
<p><b>4.2</b></p>	<p><b>(a) What quantifiable progress can be demonstrated towards the achievement of the international goals for 100% of farms to have effective sea lice management such that there is no increase in sea lice loads, or lice-induced mortality of wild salmonids attributable to sea lice? (b) How is this progress monitored, including monitoring of wild fish? (c) If progress cannot be demonstrated, what additional measures are proposed and in what timescale?</b> <i>(Max. 200 words each)</i>  <i>(Reference: BMP Guidance)</i>  <i>The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.</i></p>
<p>(a)</p>	<p>Specific actions have not been adopted as sea-lice has not been reported as a problem in freshwater</p>
<p>(b)</p>	<p>The sanitary status of all spawner salmon passing the salmon trap is monitored, but presence of sea lice has never been detected.</p>
<p>(c)</p>	<p>Not applicable</p>
<p><b>4.3</b></p>	<p><b>(a) What quantifiable progress can be demonstrated towards the achievement of the international goals for achieving 100% containment in all (i) freshwater and (ii) marine aquaculture production facilities? (b) How is this progress monitored, including monitoring of wild fish (genetic introgression) and proportion of escaped farmed salmon in the spawning populations? (c) If progress cannot be demonstrated, what additional measures (e.g. use of sterile salmon in fish farming) are proposed and in what timescale?</b> <i>(Max. 200 words each)</i>  <i>(Reference: BMP Guidance)</i>  <i>The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.</i></p>
<p>(a)(i)</p>	<p>Sanitary analyses are carried out on a regular basis by the Government of Navarra to exclude the presence of any fish farm related diseases in the hatchery.</p>

(a)(ii) There are no marine aquaculture facilities in the Bidasoa River basin
(b) All salmon reared in the salmon fish farm are used for stocking the Bidasoa river. Since juveniles are the offspring of wild males and female spawners captured from the Bidasoa river, there is no risk of genetic introgression
(c) Not applicable
<p><b>4.4 What adaptive management and / or scientific research is underway that could facilitate better achievement of NASCO’s international goals for sea lice and containment such that the environmental impact on wild salmonids can be minimised? (Max 200 words)</b>  <i>(Reference: BMP Guidance and Article 11 of the Williamsburg Resolution)</i></p>
<p>There is no specific research underway in the Bidasoa River related to sea lice. However, all adult salmon entering the Bidasoa River fish trap are monitored for the presence of sea lice.</p>
<p><b>4.5 What is the approach for determining the location of aquaculture facilities in (a) freshwater and (b) marine environments to minimise the risks to wild salmonid stocks? (Max. 200 words for each)</b></p>
<p>(a) The only salmon farm in the Bidasoa River basin was built more than 100 years ago. It is owned and managed by the Government of Navarra. This facility works as a freshwater hatchery, producing salmon yearlings from native wild parental broodstock for supplemental stocking within the Bidasoa river basin. Brown trout is also reared (although not produced, as production and first growth stages are carried out at a different fish farm in other basin), from the juvenile to the adult stage before they are stocked in different river of Navarra. As a general rule, the Government of Navarra will inform negatively to the installation of new commercial aquaculture facilities for salmon production that could significantly affect wild salmon population or its habitats in the Bidasoa river catchment.  There is also a small commercial trout fish farm, built in the 90’s</p>
(b) There is none in Bidasoa River
<p><b>4.6 What progress has been made to implement NASCO’s guidance on introductions, transfers and stocking? (Max. 200 words)</b>  <i>(Reference: Articles 5 and 6 and Annex 4 of the Williamsburg Resolution)</i></p>

As mentioned, there is only one aquaculture facility for salmon in the Bidasoa river basin, which is owned and managed by the Government of Navarra. This facility works as a hatchery, producing salmon yearlings from native wild parental broodstock for supplemental stocking within the Bidasoa river basin. Therefore the operation of this freshwater aquaculture facility is in accordance with article 5 of the Williamsburg Resolution.

Introduction of non-indigenous fish in Bidasoa River (or in any other river in Navarra) is forbidden by law. If any alien species is detected, the Government of Navarra carries out the necessary actions for its eradication. Therefore, article 6 of the Williamsburg Resolution is also met.

According to the classification included in Annex 4 of the Williamsburg Resolution, Bidasoa River would be classified as a Class II River due to the habitat alteration. The stocking guidelines applicable to Class II river are met in Bidasoa River.

**4.7 Is there (a) a requirement to evaluate thoroughly risks and benefits before undertaking any stocking programme and (b) a presumption against stocking for purely socio-political / economic reasons? (Max. 200 words each)**  
*(Reference: Guidelines for incorporating social and economic factors in decisions under the Precautionary Approach and Annex 4 of the Williamsburg Resolution)*

(a) The stocking decision is taken by the Government of Navarra exclusively under scientific data evidence, in order to improve the salmon population in the basin.

(b) Stocking is only limited by the production capacity of the fish farm, but there are no socio-political or economic constraints.

**4.8 What is the policy / strategy on use of transgenic salmon? (Max. 200 words)**  
*(Reference: Article 7 and Annex 5 of the Williamsburg Resolution)*

It is not applicable

**4.9 For Members of the North-East Atlantic Commission only: What measures are in place, or are planned, to implement the eleven recommendations contained in the ‘Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of *Gyrodactylus salaris* and eradicate it if introduced, including the development and testing of contingency plans? (Max. 200 words)**  
*(Reference ‘Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced, NEA(18)08)*

It is not applicable

**4.10 Identify the main threats to wild salmon and challenges for management in relation to aquaculture, introductions and transfers, and transgenics.**

Threat / Challenge A1

Continue supplemental stocking until Favourable Conservation Status is achieved

Threat / challenge A2	Genetic variability of the population could be at risk
Threat / challenge A3	
Threat / challenge A4	

Copy and paste lines to add further threats/challenges which should be labelled A5, A6, etc.

<p><b>4.11 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 4.10 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for aquaculture, introductions and transfers, and transgenics?</b></p>		
<b>Action A1:</b>	Description of action:	Supplemental stocking of the Bidasoa River with salmon yearlings: (1) Selection and transfer of wild spawners from the fish trap to the hatchery. (2) Artificial spawning and fry growth in captivity. (3) Differential tagging of fry according to stocking moment. (4) Supplemental stocking in the Bidasoa River and tributaries, following the annual stocking plan.
	Planned timescale (include milestones where appropriate):	Annually.
	Expected outcome:	Increase of the emigrating smolt population and returning salmon.
	Approach for monitoring effectiveness & enforcement:	Quantitative goal: number of wild spawners transferred to the hatchery, number of eggs produced, number of fry tagged and number of fry stocked. Monitored by: the corresponding report that will be published in the webpage of the Department of Environment of the Government of Navarra
	Funding secured for both action and monitoring programme?	Yes
<b>Action A2:</b>	Description of action:	Update of the knowledge on the genetic characterization of the salmon population
	Planned timescale (include milestones where appropriate):	2020
	Expected outcome:	Study of the genetic characterization of the salmon population

	Approach for monitoring effectiveness & enforcement:	Quantitative goal: knowledge on the genetic characterization of the salmon population has been updated Monitored by: the corresponding report that will be published in the webpage of the Department of Environment of the Government of Navarra
	Funding secured for both action and monitoring programme?	Expected
<b>Action A3:</b>	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.
<b>Action A4:</b>	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

*Copy and paste lines to add further actions which should be labelled A5, A6, etc*